

REMARKS

Claims 8-17 are pending in the present application. Claims 8 and 12 are amended above. No new matter is added by the claim amendments. Entry is respectfully requested.

Claims 8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang, *et al.* (United States Patent No. 5,546,543) in view of Brown, *et al.* (United States Patent No. 6,397,287) and further in view of Rudin, *et al.* (United States Patent No. 6,014,722), O'Brien (United States Patent No. 6,796,961) and Treadaway, *et al.* (United States Patent No. 6,907,048 - referred to hereinafter as "Treadaway")). Reconsideration and removal of the rejections, and allowance of the claims, are respectfully requested.

Applicants note that the "Response to Arguments" section of the Office Action at page 1 includes suggestions for amending the claims to further distinguish the claims over the teachings of the prior art. It is believed that the above amendments are in accordance with the suggestions and place the claims in condition for allowance. Such allowance is respectfully requested.

Independent claim 8 is amended herein to clarify that an "emergency mode determination circuit" outputs an "emergency mode signal on an emergency mode signal line." In addition, claim 8 is amended herein to clarify that a "first determination circuit" determines if an "occupancy level" of a "receiving buffer" is "increasing," and outputs a "result of the determination" as a "first signal" on a "first signal line" indicating "whether the occupancy level of the receiving buffer is increasing." In addition, claim 8 is amended herein to clarify that a "second determination circuit" determines if a "vacancy level" of a "transmitting buffer" is "increasing" by "comparing the vacancy level of the transmitting buffer with a previous transmitting buffer vacancy level that is stored in the second determination circuit" and outputs a "result of the determination" as a "second signal" on a "second signal line" indicating "whether the vacancy level of the transmitting buffer is increasing." In addition, claim 8 is amended herein to clarify that a "comparing circuit" compares the "vacancy level of the transmitting buffer" with the "occupancy level of the receiving buffer" and outputs a "comparison result signal" on a

“comparison result signal line” that “indicates which of the occupancy level of the receiving buffer and the vacancy level of the transmitting buffer is greater.” In addition, claim 8 is amended herein to clarify that a “logic circuit” is “coupled to the emergency mode signal line, the first signal line, the second signal line, and the comparison result signal line,” and outputs a “permission signal to the receiving buffer or the transmitting buffer” in response to a “combination of the emergency mode signal, the first signal indicating whether the occupancy level of the receiving buffer is increasing, the second signal indicating whether the vacancy level of the transmitting buffer is increasing, and the comparison result signal.”

Independent claim 12 is amended herein to clarify that the method includes “determining a present operational state as an emergency mode” when “both the transmitting buffer and the receiving buffer” “request access to” a “system bus,” when an “occupancy level of the receiving buffer is higher than a threshold occupancy level of the receiving buffer,” and when a “vacancy level of the transmitting buffer is higher than a threshold vacancy level of the transmitting buffer,” and, “in response, generating an emergency mode signal.” In addition, claim 12 is amended herein to clarify that “when the operational state is determined as the emergency mode: comparing the occupancy level of data in the receiving buffer with the vacancy level of data in the transmitting buffer, and, in response, generating a comparison result signal that indicates which of the occupancy level of data in the receiving buffer and the vacancy level of data in the transmitting buffer is greater,” and wherein “if the comparison result signal indicates that the occupancy level of data in the receiving buffer is greater than the vacancy level of data in the transmitting buffer, then determining if the occupancy level of the receiving buffer is increasing by comparing the occupancy level of the receiving buffer with a previous receiving buffer occupancy level, and, in response, generating a first signal that indicates whether the occupancy level of the receiving buffer is increasing,” and wherein “if the comparison result signal indicates that the occupancy level of data in the receiving buffer is not greater than the vacancy level of data in the transmitting buffer, then determining if the vacancy level of the transmitting buffer is increasing by comparing the vacancy level of the transmitting buffer with a stored previous transmitting buffer vacancy level,” and, “in response, generating a second signal that indicates

whether the vacancy level of the transmitting buffer is increasing.” In addition, claim 12 is amended herein to clarify “granting access” to a “system bus” to “one of the transmitting buffer and the receiving buffer” is in response to “a combination of the emergency mode signal, the first signal indicating whether the occupancy level of the receiving buffer is increasing, the second signal indicating whether the vacancy level of the transmitting buffer is increasing, and the comparison result signal.”

With regard to the rejection of independent claims 8 and 12, it is submitted that the combination of Yang, Brown, Rudin, O’Brien, and Treadaway fails to teach or suggest the present invention as claimed in amended independent claims 8 and 12. Specifically, it is submitted that none of the cited references, alone or in combination, teaches or suggests a “first determination circuit” that determines if an “occupancy level” of a “receiving buffer” is “increasing,” and outputs a “result of the determination” as a “first signal” on a “first signal line” indicating “whether the occupancy level of the receiving buffer is increasing,” as claimed in claim 8, and none of the cited references teaches or suggests “if the comparison result signal indicates that the occupancy level of data in the receiving buffer is greater than the vacancy level of data in the transmitting buffer, then determining if the occupancy level of the receiving buffer is increasing by comparing the occupancy level of the receiving buffer with a previous receiving buffer occupancy level, and, in response, generating a first signal that indicates whether the occupancy level of the receiving buffer is increasing,” as claimed in claim 12. With regard to Yang, Brown, Rudin, and O’Brien, Applicants note that the Office Action at page 3, lines 4-7 refers to the combination of Yang, Brown, Rudin, and O’Brien as not “determining if the occupancy level of the receiving buffer is increasing....” The Office Action cites Treadaway as implicitly teaching this feature. With regard to Treadaway, Treadaway discloses an approach for avoiding overflow in a receiving buffer 252B that includes monitoring the current depth of the receive buffer 252B (see Treadaway, FIG. 13 and column 21, lines 12-14). However, while the receive buffer 252B adjusts the transmission rate based on the amount of occupied storage space in the receive buffer 252B (see Treadaway, FIG. 13 and column 21, lines 16-18), there is no teaching or suggestion in Treadaway of the receive buffer 252B being a “first determination

circuit” that determines if an “occupancy level” of a “receiving buffer” is “increasing,” and outputs a “result of the determination” as a “first signal” on a “first signal line” indicating “whether the occupancy level of the receiving buffer is increasing,” as claimed in claim 8, and there is no teaching or suggestion in Treadaway that “if the comparison result signal indicates that the occupancy level of data in the receiving buffer is greater than the vacancy level of data in the transmitting buffer, then determining if the occupancy level of the receiving buffer is increasing by comparing the occupancy level of the receiving buffer with a previous receiving buffer occupancy level, and, in response, generating a first signal that indicates whether the occupancy level of the receiving buffer is increasing,” as claimed in claim 12. Treadaway further discloses that, in addition to outputting Ethernet packets to a LAN, the receive buffer 252B of Treadaway outputs a receive data valid signal RXDV to an arbitration logic block 270, a FIFO pointer (see Treadaway, FIG. 13). However, none of the abovementioned outputs of receive buffer 252B of Treadaway is a “first signal on a first signal line” (claim 8) or a “first signal” (claim 12) that “indicates whether the occupancy level of the receiving buffer is increasing,” as claimed.

In addition, it is submitted that none of the cited references, alone or in combination, teaches or suggests a “second determination circuit” for determining if a “vacancy level” of a “transmitting buffer” is “increasing” by “comparing the vacancy level of the transmitting buffer with a previous transmitting buffer vacancy level that is stored in the second determination circuit” and for outputting a “result of the determination” as a “second signal” on a “second signal line indicating whether the vacancy level of the transmitting buffer is increasing,” as claimed in claim 8, or “if the comparison result signal indicates that the occupancy level of data in the receiving buffer is not greater than the vacancy level of data in the transmitting buffer, then determining if the vacancy level of the transmitting buffer is increasing by comparing the vacancy level of the transmitting buffer with a stored previous transmitting buffer vacancy level,” and, “in response, generating a second signal that indicates whether the vacancy level of the transmitting buffer is increasing,” as claimed in claim 12. With regard to Yang, Brown, Rudin, and O’Brien, Applicants note that the Office Action at page 3, lines 8-13 refers to the

combination of Yang, Brown, Rudin, and O'Brien as not "determining if the vacancy level of the transmitting buffer is increasing.....," and again cites Treadaway as implicitly teaching this feature. Treadaway discloses a packet counter 272 that maintains a current count of complete Ethernet data packets in a transmit buffer 252A (see Treadaway, FIG. 12 and column 18, line 48 through column 19, line 8). However, there is no teaching in Treadaway of the packet counter 272 being a "second determination circuit" that determines if a "vacancy level" of a "transmitting buffer" is "increasing" by "comparing the vacancy level of the transmitting buffer with a previous transmitting buffer vacancy level that is stored in the second determination circuit" and for outputting a "result of the determination" as a "second signal" on a "second signal line indicating whether the vacancy level of the transmitting buffer is increasing," as claimed in claim 8, and there is no teaching in Treadaway that "if the comparison result signal indicates that the occupancy level of data in the receiving buffer is not greater than the vacancy level of data in the transmitting buffer, then determining if the vacancy level of the transmitting buffer is increasing by comparing the vacancy level of the transmitting buffer with a stored previous transmitting buffer vacancy level," and, "in response, generating a second signal that indicates whether the vacancy level of the transmitting buffer is increasing," as claimed in claim 12. Specifically, the packet counter 272 of Treadaway does not output a "second signal on a second signal line" (claim 8) or a "second signal" (claim 12) that indicates "whether the vacancy level of the transmitting buffer is increasing," as claimed. Instead, the packet counter 272 of Treadaway outputs a current count of complete Ethernet data packets to a threshold compare block 274 (see Treadaway, FIG. 12 and column 19, lines 6-10). The threshold compare block 274 notifies a read packet state machine when a sufficient number of complete Ethernet packets are stored in the transmit buffer 252A (see Treadaway, column 19, lines 10-14). The Ethernet packet count that is output from the packet counter 272 of Treadaway is not a "second signal" that is output on a "second signal line" that "indicates whether the vacancy level of the transmitting buffer is increasing," as claimed in claim 8, or a generated "second signal" that "indicates whether the vacancy level of the transmitting buffer is increasing," as claimed in claim 12.

In addition, it is submitted that there is no teaching or suggestion in any of the Yang, Brown, Rudin, O'Brien, and Treadaway references, alone or in combination, of a "logic circuit" that is "coupled to the emergency mode signal line, the first signal line, the second signal line, and the comparison result signal line," and outputs a "permission signal to the receiving buffer or the transmitting buffer" in response to a "combination of the emergency mode signal, the first signal indicating whether the occupancy level of the receiving buffer is increasing, the second signal indicating whether the vacancy level of the transmitting buffer is increasing, and the comparison result signal," as claimed in amended independent claim 8, or "granting access to the system bus" to "one of the transmitting buffer and the receiving buffer" in response to "a combination of the emergency mode signal, the first signal indicating whether the occupancy level of the receiving buffer is increasing, the second signal indicating whether the vacancy level of the transmitting buffer is increasing, and the comparison result signal," as claimed in amended independent claim 12.


Accordingly, it is submitted that Yang, Brown, Rudin, O'Brien, and Treadaway, taken alone or in combination, fail to teach or suggest the invention set forth in amended independent claims 8 and 12. Since the combination of Yang, Brown, Rudin, O'Brien, and Treadaway fails to teach or suggest the invention set forth in amended independent claims 8 and 12, the claims are believed to be allowable over the cited references. With regard to dependent claims 9-11 and 13-17, it follows that these claims should inherit the allowability of the independent claims from which they depend. Accordingly, reconsideration and removal of the rejections of claims 8-17 under 35 U.S.C. 103(a) based on Yang, Brown, Rudin, O'Brien, and Treadaway, and allowance of claims 8-17 are respectfully requested.

Closing Remarks

It is submitted that all claims are in condition for allowance, and such allowance is respectfully requested. If prosecution of the application can be expedited by a telephone conference, the Examiner is invited to call the undersigned at the number given below.

Respectfully submitted,

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